

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a wireless communication system supporting broadcast transmissions, ~~the system having a broadcast source node and at least one termination node, at least one router coupled between the source node and the at least one termination node,~~ a method for setting up transmission paths comprising:
 - determining a transmission range for a broadcast transmission within the system, wherein the transmission range identifies a first termination node for receiving the broadcast transmission;
 - building a multicast tree from ~~[[a]]~~ the first termination node to ~~[[the]]~~ a broadcast source node, the multicast tree including the at least one router, ~~wherein the first termination node is one of a packet control node or a packet data services node~~ wherein building the multicast tree further comprises initiating a registration chain including nodes from the first termination node to the broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission; and
 - transmitting a broadcast message through the multicast tree over the transmission range.
2. (Original) The method as in claim 1, wherein building a multicast tree comprises:

successively registering with neighboring multicast routers between the first termination node and the broadcast source node.

3. (Original) The method as in claim 1, wherein transmitting the broadcast message further comprises:

receiving the broadcast message at the broadcast source; and
in response to receiving the broadcast message, the broadcast source
encapsulating the broadcast message in an Internet Protocol
packet to form a multicast Internet Protocol packet.

4. (Original) The method as in claim 3, wherein the multicast Internet Protocol packet identifies the broadcast source as a source and identifies a multicast Internet Protocol address as a destination.

5. (Currently Amended) The method of claim 4, wherein transmitting the broadcast message further comprises:

receiving the multicast Internet Protocol packet at the first termination
~~point~~ node;
in response to receiving the multicast Internet Protocol packet the first
termination ~~point~~ node compresses the multicast Internet Protocol
packet to ~~from~~ form a compressed packet; and
encapsulating the compressed packet in an Internet Protocol packet to
~~from~~ form a compressed packet, further comprising changing of
addressing the compressed packet wherein the source identifies
the compressed packet identifying the first termination point node
as a source and the destination identifies a BSC IP address.

6. (Currently Amended) A method for processing Internet Protocol packets in a wireless transmission system supporting broadcast transmissions, the method comprising:

receiving an Internet Protocol packet at a packet data service node, the Internet Protocol packet encapsulating a broadcast message, the Internet Protocol packet having a destination address comprising a multicast Internet Protocol address;

compressing the Internet Protocol packet;

applying a framing protocol to produce a compressed frame ~~packet~~ framed packet;

encapsulating the compressed framed packet with a routing protocol; and

further encapsulating the encapsulated compressed framed packet according to a multicast Internet Protocol to form a multicast compressed framed packet, further comprising addressing the multicast compressed frame packet with a destination address for transmission corresponding to the multicast Internet Protocol address from the Internet Protocol packet.

7. (Canceled)

8. (Canceled)

9. (Currently Amended) An infrastructure element for generating Internet Protocol packets in a wireless transmission system supporting broadcast transmissions, the infrastructure element comprising:

means for determining a broadcast transmission range for a broadcast transmission within a wireless transmission system, wherein the broadcast range identifies a first termination node for receiving the broadcast transmission, wherein the means for determining further comprises a means for building a multicast tree comprising initiating a registration chain including nodes from the first termination node to a broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent

node until reaching a node already registered with respect to the broadcast transmission;

means for generating an Internet Protocol packet, the Internet Protocol packet having a multicast address; and

means for transmitting the Internet Protocol packet, ~~wherein the infrastructure element is one of a packet control node or a packet data services node.~~

10. (Previously Presented) A wireless communication system for processing broadcast transmissions in a wireless communication system, the system comprising:

a packet service data node adapted to receive a broadcast message comprising a multicast Internet Protocol address, wherein the packet service data node is operable to generate and transmit a multicast compressed framed packet based on the broadcast message, wherein the multicast compressed framed packet is addressed to the multicast Internet Protocol address; and

a packet control function node adapted to receive the multicast compressed framed packet, wherein the packet control function node is operable to generate and transmit at least one unicast packet based on the multicast compressed framed packet, wherein the at least one unicast packet is addressed to at least one unicast address corresponding to a base station broadcast message, the broadcast message encapsulated in an Internet Protocol packet addressed to a multicast address wherein the Internet Protocol packet has been compressed and a framing protocol applied to produce a compressed framed packet, wherein the compressed framed packet has been encapsulated with a routing protocol.

11. (Canceled)

12. (Original) The system as in claim 10, wherein the packet control function node processes the broadcast message and forwards the broadcast message to an intended recipient.
13. (Canceled)
14. (Currently Amended) An infrastructure element for processing broadcast transmissions in a wireless communication system, the infrastructure element comprising:
- means for receiving a broadcast message, the broadcast message encapsulated in an Internet Protocol packet, the Internet Protocol packet addressed to a multicast address;
 - means for compressing the Internet Protocol packet; ~~addressed to a multicast address and~~
 - means for applying a framing protocol to the compressed Internet Protocol packet, resulting in a compressed framed packet;
 - means for ~~further~~ encapsulating the compressed framed packet with a routing protocol;
 - means for further encapsulating the encapsulated compressed framed packet according to a multicast Internet Protocol to form a multicast compressed framed packet, further comprising addressing the multicast compressed frame packet with a destination address for transmission corresponding to the multicast Internet Protocol address from the Internet Protocol packet and
 - ~~means for addressing the broadcast message to an intended recipient, wherein the infrastructure element is a packet control function node.~~
15. (Canceled)
16. (Canceled)

17. (Canceled)
18. (Currently Amended) An infrastructure element for processing broadcast transmissions in a wireless communication system, the infrastructure element comprising:
- means for receiving a broadcast message, the broadcast message encapsulated in an Internet Protocol packet, the Internet Protocol packet addressed to a multicast address;
 - means for compressing the Internet Protocol packet addresses to a multicast address and applying a framing protocol resulting in a compresses packet;
 - means for further encapsulating the compresses framed packet with a routing protocol;
 - means for encapsulating the compressed framed packet according to ~~[[a]]~~ the multicast ~~Internet Protocol~~ address; and
 - means for preparing a second Internet Protocol packet encapsulating the broadcast message and addressed to ~~[[a]]~~ the multicast address, wherein the infrastructure element is a packet data service node.
19. (Currently Amended) An infrastructure element for processing broadcast transmissions in a wireless communication system, the infrastructure element comprising:
- means for receiving a broadcast message, the broadcast message encapsulated in an Internet Protocol packet, the Internet Protocol packet addressed to a multicast address;
 - means for compressing the Internet Protocol packet addresses to a multicast address and applying a framing protocol resulting in a compresses packet;
 - means for further encapsulating the compresses framed packet with a routing protocol;

means for encapsulating the compressed framed packet according to ~~[[a]]~~ the multicast ~~Internet Protocol~~ address; and

means for preparing a second Internet Protocol packet encapsulating the broadcast message and addressed to ~~[[a]]~~ the multicast address, wherein the multicast address corresponds to intended recipients of the broadcast message.

20. (Canceled)

21. (Currently Amended) A communication path for processing broadcast messages in a wireless communication system, comprising:

a first multicast tree portion formed between a content source and a packet data service node, wherein the first multicast tree portion is operable to transmit a broadcast message ~~is transmitted~~ addressed to a multicast Internet Protocol address;

a second multicast tree portion formed between the packet data service node and a packet control function node, wherein the second multicast tree portion is operable to generate and transmit a multicast compressed framed packet based on the broadcast message, wherein the multicast compressed framed packet is ~~transmitted~~ addressed to ~~[[a]]~~ the multicast Internet Protocol address; and

a third portion formed from the packet control function node to the base station, wherein the third multicast tree portion is operable to generate and transmit at least one unicast packet based on the ~~broadcast message is transmitted~~ the multicast compressed framed packet, wherein the at least one unicast packet is addressed to at least one unicast address ~~and wherein the first multicast tree portion is formed between a content source and a packet data service node, the second multicast tree portion is formed between the packet data service node and a packet control function node,~~

~~and the third portion is formed from the packet control function~~
~~node~~ corresponding to ~~[[the]]~~ a base station.

22. (New) The method of claim 1, further comprising:
receiving the broadcast message as a multicast Internet Protocol packet
at the first termination node, wherein the multicast Internet Protocol
packet comprises a timestamp, wherein first termination node
comprises an anchor BSC node;
wherein transmitting the broadcast message further comprises:
duplicating the multicast Internet Protocol packet at the anchor BSC
node, wherein duplicating includes copying the timestamp;
transmitting the duplicate multicast Internet Protocol packet to at
least one neighboring BSC node; and
transmitting the respective multicast Internet Protocol packet and
the duplicate multicast Internet Protocol packet to a same
mobile station by both the anchor BSC node and the at least
one neighboring BSC node.
23. (New) The method of claim 22, wherein transmitting the broadcast
message further comprises transmitting a High Speed Broadcast Service
(HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within
a single broadcast channel.
24. (New) The method of claim 1, wherein transmitting the broadcast
message further comprises transmitting a High Speed Broadcast Service
(HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within
a single broadcast channel.
25. (New) A wireless communication system supporting broadcast
transmissions, comprising:

- means for determining a transmission range for a broadcast transmission within the system, wherein the transmission range identifies a first termination node for receiving the broadcast transmission;
- means for building a multicast tree from the first termination node to a broadcast source node, the multicast tree including the at least one router, wherein building the multicast tree further comprises initiating a registration chain including nodes from the first termination node to the broadcast source node, wherein the first termination node and each successive node in the system approaching the broadcast source node in the registration chain registers with an adjacent node until reaching a node already registered with respect to the broadcast transmission; and
- means for transmitting a broadcast message through the multicast tree over the transmission range.
26. (New) The system of claim 25, further comprising:
- wherein the broadcast message comprises a multicast Internet Protocol packet at the first termination node, wherein the multicast Internet Protocol packet comprises a timestamp, wherein first termination node comprises an anchor BSC node;
- wherein the means for transmitting the broadcast message further comprises:
- means for duplicating the multicast Internet Protocol packet at the anchor BSC node, including means for copying the timestamp;
- means for transmitting the duplicate multicast Internet Protocol packet to at least one neighboring BSC node; and
- wherein the anchor node and the at least one neighboring node further comprise means for transmitting to a same mobile station the respective multicast Internet Protocol packet and the duplicate multicast Internet Protocol packet.

27. (New) The system of claim 26, wherein the broadcast message further comprises a High Speed Broadcast Service (HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within a single broadcast channel.
28. (New) The system of claim 25, wherein the broadcast message further comprises a High Speed Broadcast Service (HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within a single broadcast channel.
29. (New) The system of claim 10, further comprising:
a content source operable to transmit the broadcast message to the packet service data node based on a transmission range, wherein the transmission range identifies a first termination node for receiving the broadcast message, wherein the transmission range comprises a multicast tree built by initiating a registration chain from the first termination node to the content source, wherein the first termination node and each successive node in the registration chain approaching the content source registers with an adjacent node until reaching a node already registered with respect to the broadcast message.
30. (New) The system of claim 10, further comprising:
wherein the multicast compressed framed packet further comprises a timestamp;
wherein the packet control function node is further operable further transmit the multicast compressed framed packet; and
an anchor BSC operable to receive either the at least one unicast packet or the multicast compressed framed packet, wherein the anchor BSC is further operable to duplicate the multicast compressed framed packet, including copying the timestamp, and further

operable to transmit the duplicate multicast compressed framed packet;

at least one neighboring BSC node operable to receive the duplicate multicast compressed framed packet; and

wherein both the anchor BSC node and the at least one neighboring BSC node are operable to transmit the respective multicast Internet Protocol packet and the duplicate multicast Internet Protocol packet to a same mobile station.

31. (New) The system of claim 30, wherein the broadcast message further comprises a High Speed Broadcast Service (HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within a single broadcast channel.
32. (New) The system of claim 10, wherein the broadcast message further comprises a High Speed Broadcast Service (HSBS) channel multiplexed in a Time-Division Multiplex (TDM) fashion within a single broadcast channel.